

# The Challenges of the Digital Divide in ASEAN and Its Impact on Digital Business Acceleration

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## Abstract

This study examines the dynamics of digital transformation and the persistent digital divide across ASEAN countries, focusing on the impact of digital infrastructure and policy readiness on inclusive economic growth. Using a qualitative descriptive approach through secondary data analysis from academic publications (2019–2024) and international institutional reports, this research integrates statistical data from the ASEAN Secretariat, ITU, and World Bank to reveal varying levels of connectivity and digital literacy. The findings indicate that although digital adoption in ASEAN has accelerated, disparities in infrastructure quality, policy alignment, and human capital remain significant. The study concludes that strengthening regional cooperation, harmonizing digital policies, and investing in equitable access are essential to achieving a more inclusive and resilient digital economy in Southeast Asia.

**Keyword:** *digital divide, ASEAN, digital transformation, inclusive growth.*

## INTRODUCTION

The phenomenon of the digital divide in the ASEAN region is a complex and multidimensional issue that encompasses technological, social, economic, and policy dimensions. With a population exceeding 650 million people, the region holds enormous potential as a dynamic and competitive digital market. However, this potential remains underutilized due to significant disparities in digital infrastructure and technological literacy among member states. According to the ASEAN Secretariat (2023), gaps in internet access, network quality, and availability of digital human resources remain key obstacles to achieving inclusive digital economic growth. Countries such as Singapore and Malaysia have reached advanced levels of digital maturity supported by robust infrastructure, while Laos, Cambodia, and Myanmar lag behind in technology adoption and institutional readiness. In Indonesia, although the digital economy contributed more than USD 80 billion in 2023 (BPS, 2023), disparities between urban and rural areas, as well as between high- and low-income groups, continue to hinder the acceleration of an inclusive digital transformation.

Theoretically, the digital divide can hinder economic growth and slow business innovation. Based on Rogers' (2003) diffusion of innovation theory, uneven technology adoption reduces systemic efficiency and creates inequalities in access to emerging economic opportunities. In the context of digital business, this means that companies in regions with limited digital infrastructure face challenges in adopting advanced technologies such as artificial intelligence, big data, and cross-border e-commerce. The digital ecosystem model proposed by Parker et al. (2016) also emphasizes that digital market integration can only be achieved through robust connectivity and supportive regulation. Therefore, the equalization of infrastructure and the enhancement of digital literacy are essential prerequisites for accelerating digital business across ASEAN.

Previous research provides a strong empirical foundation regarding the determinants of the digital divide within ASEAN. Nguyen et al. (2022) identified disparities in digital infrastructure investment and regulatory readiness as key drivers of inter-country gaps. Rasyid and Putra (2021) found that in Indonesia, low digital literacy and limited access to electronic payment systems hinder SMEs' participation in the digital ecosystem. Meanwhile, Lee and Tan (2020) highlighted that inadequate digital infrastructure constrains cross-border market integration, particularly in logistics and e-commerce sectors. These findings demonstrate that the digital divide is not merely a technological problem but also a structural issue that directly affects economic competitiveness and cross-border business collaboration within ASEAN.

Although numerous studies have examined the digital divide from infrastructural and policy perspectives, a significant research gap remains in understanding the direct relationship between the digital divide and the acceleration of digital business across ASEAN. Most previous research has focused on domestic contexts or specific industries without systematically linking these findings to regional economic dynamics. Hence, this study aims to fill this gap by employing a qualitative secondary research approach, analyzing data from regional reports, academic publications, and international institutions such as the World Bank, ITU, and the ASEAN Secretariat. This approach enables an in-depth exploration of the causal factors, economic implications, and relevant policy strategies to bridge the digital divide and accelerate digital business transformation in the region.

The urgency of this study lies in the fact that the digital divide has direct implications for economic inclusivity, business competitiveness, and regional economic integration. Within the context of ASEAN's ongoing efforts to establish the Digital Economy Framework Agreement (DEFA) by 2025, understanding digital disparities is crucial to ensuring that all member states benefit equally from digital transformation. Academically, this study contributes to the theoretical development of the relationship between equitable digital access and innovation-driven economic acceleration. Practically, the findings are expected to provide policy insights for governments and private sectors in strengthening cross-border digital collaboration and narrowing the digital divide within the ASEAN region.

## RESEARCH METHOD

This study employs a qualitative secondary research approach aimed at deeply understanding the phenomenon of digital inequality in ASEAN and its impact on digital business acceleration. This approach is considered appropriate because it enables the researcher to analyze socio-economic conditions based on pre-existing data such as institutional reports, academic literature, and international datasets (Creswell, 2018). According to Flick (Flick, 2018), qualitative secondary research allows researchers to interpret complex social contexts using verified information sources, thereby enhancing analytical rigor. Therefore, the study does not involve primary data collection but focuses on interpretative analysis of secondary data from credible institutions, including the World Bank (2023), International Telecommunication Union (ITU, 2022), and ASEAN Digital Masterplan 2025 (Pascua, 2025; Zahrah & Darmastuti, 2024).

The research procedure consists of three key stages: secondary data collection, thematic analysis, and interpretation. Data collection was conducted through a systematic literature review of journals, digital economy reports, and regional statistics following the guidelines of Snyder (2019), who emphasized the importance of relevance, validity, and timeliness in selecting sources for secondary research. Thematic analysis was then applied to identify patterns and relationships between digital inequality and digital business acceleration in the ASEAN region (Braun & Clarke, 2019). The process involved coding, categorization, and interpretation based on major themes such as digital infrastructure, digital literacy, public policy, and business readiness.

To ensure data validity and analytical credibility, the study applied source triangulation as suggested by Patton (2015), comparing data from multiple institutional and academic sources to ensure consistency and reliability. Furthermore, qualitative content analysis was used to review policy documents, digital economy reports, and previous studies to obtain a comprehensive understanding (Krippendorff, 2019). The methodological rigor of this study also adheres to the principles of transferability and dependability proposed by Lincoln and Guba (1985), ensuring that the findings can be meaningfully applied to similar contexts in future research. Ultimately, this approach is expected to provide both conceptual and empirical contributions to the growing literature on digital transformation and regional economic development in ASEAN.

## RESULTS AND DISCUSSION

Based on the compilation of secondary data from academic publications between 2019 and 2024 (see Table 1) and international institutional reports from the ASEAN Secretariat, the International Telecommunication Union (ITU), and the World Bank (2023) (see Table 2), it is evident that the digital divide across ASEAN countries remains one of the most significant structural challenges to achieving regional digital integration. The academic publications retrieved from the ScienceDirect database consistently reveal an

asymmetric pattern of digital transformation in Southeast Asia. Countries with high infrastructural readiness and advanced human capital—such as Singapore, Malaysia, and Thailand—are moving toward full-scale digitalization across both public and private sectors. In contrast, Cambodia, Laos, and Myanmar continue to struggle with fundamental barriers, including limited broadband infrastructure, uneven digital literacy, and weak institutional frameworks to support the digital economy.

**Table 1.** Digital Readiness in ASEAN Countries

Country	Digital Readiness Index	Dominant Factor	Impact on Digital Business Transformation
Singapore	0,06180556	Infrastructure, skilled workforce	Rapid growth of startups and e-commerce
Malaysia	0,05625	Economic policy support	Improved logistics efficiency
Thailand	0,05277778	ICT investment and education	Increasing SME digital adoption
Indonesia	0,04722222	Digital literacy, medium infrastructure	Regional disparities remain visible
Vietnam	0,04930556	Connectivity, young talent base	Expansion of local digital industries
Philippines	0,04513889	Unequal infrastructure	Untapped potential for digital enterprises
Cambodia	00.54	Limited HR, weak policy support	Slow digital development
Laos	00.49	Minimal infrastructure base	Limited connectivity and access
Myanmar	00.45	Political instability, low HR capacity	Major barriers to digital transformation

Source: Compiled from academic publications (2019–2024), ScienceDirect Database.

These academic data provide the foundation for a nuanced understanding of the region's digital readiness and demonstrate that the digital divide is not merely a technological issue but also a social and economic one. Meanwhile, the institutional reports provide quantitative reinforcement to this picture. Data from the ASEAN Secretariat (2023) show that Singapore and Malaysia top the region in digital economy index scores, while ITU (2023) and the World Bank (2023) highlight persistent inequalities in broadband access, affordability, and digital infrastructure investment among developing ASEAN member states. These disparities point to a deep structural imbalance in regional digital ecosystems, where connectivity gaps, affordability barriers, and policy fragmentation continue to hinder equitable growth.

**Table 2.** Economic and Digital Readiness Indicators in ASEAN Countries

Country	Internet Penetration (%)	Broadband Access (%)	Digital Economy Index Score	Digital Economy Contribution to GDP (%)
Singapore	96.04.00	89.02.00	0,06319444	19.08
Malaysia	92.07.00	83.05.00	0,05902778	14.03
Thailand	88.03.00	75.04.00	0,05416667	12.06
Indonesia	78.02.00	62.01.00	0,05	09.01
Vietnam	76.05.00	58.04.00	0,04861111	08.07
Philippines	74.09.00	57.02.00	0,04722222	08.01
Cambodia	61.03.00	42.05.00	00.59	05.02
Laos	56.04.00	37.08.00	00.54	04.06
Myanmar	49.08.00	33.01.00	00.47	03.09

Source: ASEAN Secretariat (2023); ITU (2023); World Bank (2023).

The comparative data in Tables 1 and 2 reveal a clear correlation between digital readiness and economic performance. Countries with higher digital readiness scores also demonstrate a greater

contribution of the digital economy to their GDPs, suggesting that digital infrastructure, broadband penetration, and policy coherence are essential drivers of sustainable economic transformation. This pattern aligns with the theoretical framework of the digital divide and networked economy models, which emphasize connectivity and human capital as the foundation of modern development (Castells, 2020; van Dijk, 2021).

More importantly, the persistence of this digital gap creates asymmetric growth within ASEAN. While the “digital frontrunners” like Singapore and Malaysia are leading innovation, e-commerce, and fintech adoption, the “digital followers” such as Indonesia, Vietnam, and the Philippines face infrastructural constraints that slow their transition. Meanwhile, the “digitally lagging” nations—Cambodia, Laos, and Myanmar—remain trapped in a cycle of low connectivity, limited investment, and weak institutional capacity. The unequal pace of digitalization could deepen economic polarization if not addressed through coordinated regional policies.

In this regard, the ASEAN Digital Economy Framework Agreement (DEFA), which is set to take effect in 2025, plays a strategic role in harmonizing digital regulations, expanding broadband access, and fostering regional collaboration. Through DEFA, ASEAN aims to reduce digital inequality by encouraging investment in shared infrastructure, promoting cross-border digital trade, and strengthening digital literacy programs across member states. This integrated policy initiative is expected to transform ASEAN into a cohesive digital bloc capable of competing in the global digital economy. Overall, the combined insights from academic research (2019–2024) and institutional data (2023) underscore the urgency for ASEAN to bridge its digital divide through multi-level governance, sustained infrastructure investment, and inclusive human capital development. Only by addressing these systemic inequalities can the region achieve an equitable and resilient digital future.

## CONCLUSION

This study concludes that the digital divide across ASEAN represents a multidimensional challenge that extends beyond technological limitations, encompassing economic, social, and institutional disparities among member states. Based on secondary data from academic publications (2019–2024) and international reports issued by the ASEAN Secretariat, ITU, and World Bank (2023), the analysis demonstrates that digital readiness strongly correlates with the acceleration of digital business and regional economic competitiveness. High-readiness nations such as Singapore and Malaysia have successfully cultivated mature and competitive digital ecosystems through sustained investment in infrastructure, digital education, and innovation-oriented governance, while medium-readiness countries such as Indonesia, Vietnam, and the Philippines continue to struggle with uneven digital literacy and technological access that slow their transition toward a fully digital economy. Conversely, low-readiness nations such as Cambodia, Laos, and Myanmar face profound barriers in connectivity, human capital, and digital governance, deepening the digital and economic divide across the region. This phenomenon of asymmetric digital growth reveals that digital transformation in ASEAN remains far from inclusive and risks exacerbating socio-economic inequalities if left unaddressed. Hence, the forthcoming ASEAN Digital Economy Framework Agreement (DEFA) 2025 is vital to establish harmonized digital policies, enhance cross-border investment, and foster equitable digital literacy across member states. Theoretically, these findings reaffirm the relevance of the digital divide and networked economy paradigms, which emphasize that connectivity and human capacity are central to modern economic development; practically, this study offers actionable insights for policymakers and industry actors to promote a more equitable, sustainable, and inclusive digital transformation across Southeast Asia.

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